REMARKS/ARGUMENTS

The amendment to Claim 15 corrects an inadvertent typographical error. No new matter has been entered.

Applicants appreciate the withdrawal of the previous rejections.

All of the newly presented rejections rely on at least the combination of Heikonen and Hei and the theory that it would have been obvious to replace the formic acid in Heikonen with benzoic acid. See, e.g., page 4, lines 1-4, of the Official Action. Applicants respectfully submit that this fundamental premise is incorrect.

Heikonen, as recognized in the Official Action, relies on formic acid to run at a pH of 3.5 to 4.0. See, e.g., the Abstract, page 2, lines 21-27, page 4, lines 15-17, page 5, lines 45-46, page 6, lines 33-35 and page 7, lines 20-25. This pH is attainable with formic acid because formic acid has a pKa of 3.77. Because pH = pKa + log([AT]/[HA]), at equilibrium the pH of formic acid is the pKa, which is 3.77. Benzoic acid, on the other hand, has a pKa = 4.2. Thus, while benzoic acid is suggested as useful in providing a simple antimicrobial effect on surfaces, etc., in Hei, benzoic acid is significantly less acidic than formic acid and, importantly, has substantial solubility problems (due to its hydrophobic nature) as compared to formic acid. Indeed, formic acid is miscible with water and can thus be used as highly concentrated aqueous solutions as taught in Heikonen (concentrations of 60+%, to provide a pH of 4 or less in the described AIV process; see, e.g., the Abstract, page 2, lines 6-8 of Heikonen, and page 4, lines 15-17). On the contrary, benzoic acid has a solubility of only 0.34 g/100ml and could thus not be used as a concentrated aqueous solution. Accordingly, benzoic acid could <u>not</u> provide the highly acidic pH provided by formic acid in the different setting of Heikonen, which is necessary to the process therein.

¹ See, e.g., http://en.wikipedia.org/wiki/Carboxylic_acid or http://www.zirchrom.com/organic.htm

McNeff does not cure the deficiencies in Heikonen either, as the formic acid in

Heikonen is not used therein as a preservative as such, but rather as a severely aggressive,

acidic digesting agent used to defiberize cellulosic raw material and, thereafter, for its acidic

properties, at concentrations of 60+%, to provide a pH of 4 or less in the described AIV

process (see, e.g., the Abstract, page 2, lines 6-8 of Heikonen, and page 4, lines 15-17).

Moreover, and noteworthy herein, McNeff replaces preservatives like benzoic acid with

hydrogen peroxide. See, e.g., para. [0011].

The other tertiary, etc. references cited against the claims also fail to make up for that

lacking in Heikonen, Hei and McNeff. For example, Koenig is similar to McNeff in that it

discloses, at best, preservatives, which would not be considered as equivalent to the formic

acid in Heikonen in either function or effect as described above and thus not candidates for

the replacement thereof. Rossmore and Nakanish are similarly cited as disclosing

disinfectants, etc. not pertinent to the deficiencies noted above for the primary and secondary

references.

Accordingly, and for the reasons presented above, Applicants respectfully submit that

none of the reference combinations applied against the claims present a prima facie case of

obviousness thereagainst, and Applicants thus request the reconsideration and withdrawal of

the outstanding rejections and the passage of this case to Issue.

Respectfully submitted,

OBLON, SPIYAK, McCLELLAND,

MAJER & MEUSTADT, L.L.P.

Richard L. Treanor Attorney of Record

Registration No. 36,379

Tel: (703) 413-3000

22850

Customer Number

Fax: (703) 413 -2220

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